OIPE IAP68
JUL 31 2006
PATENT & TRADEMARK OFFICE

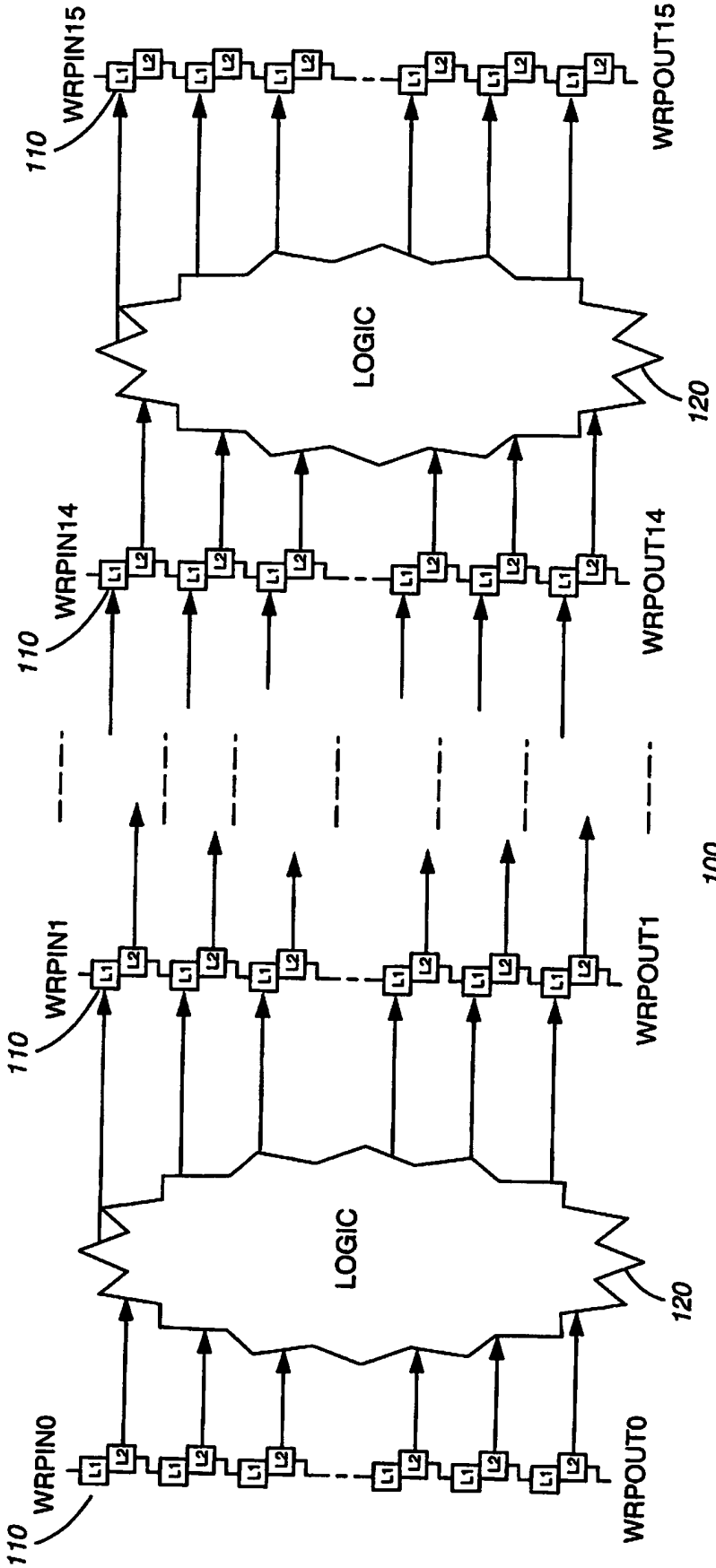


FIG. 1 PRIOR ART

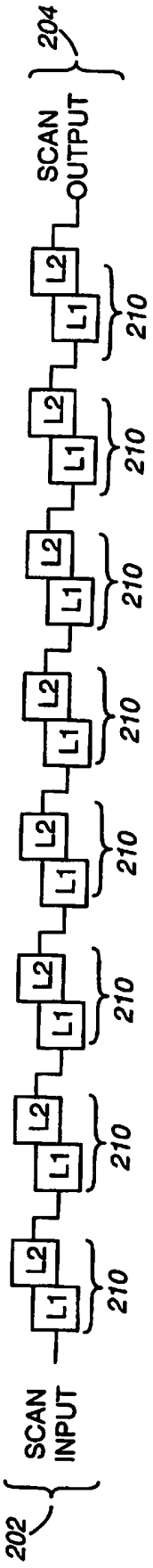
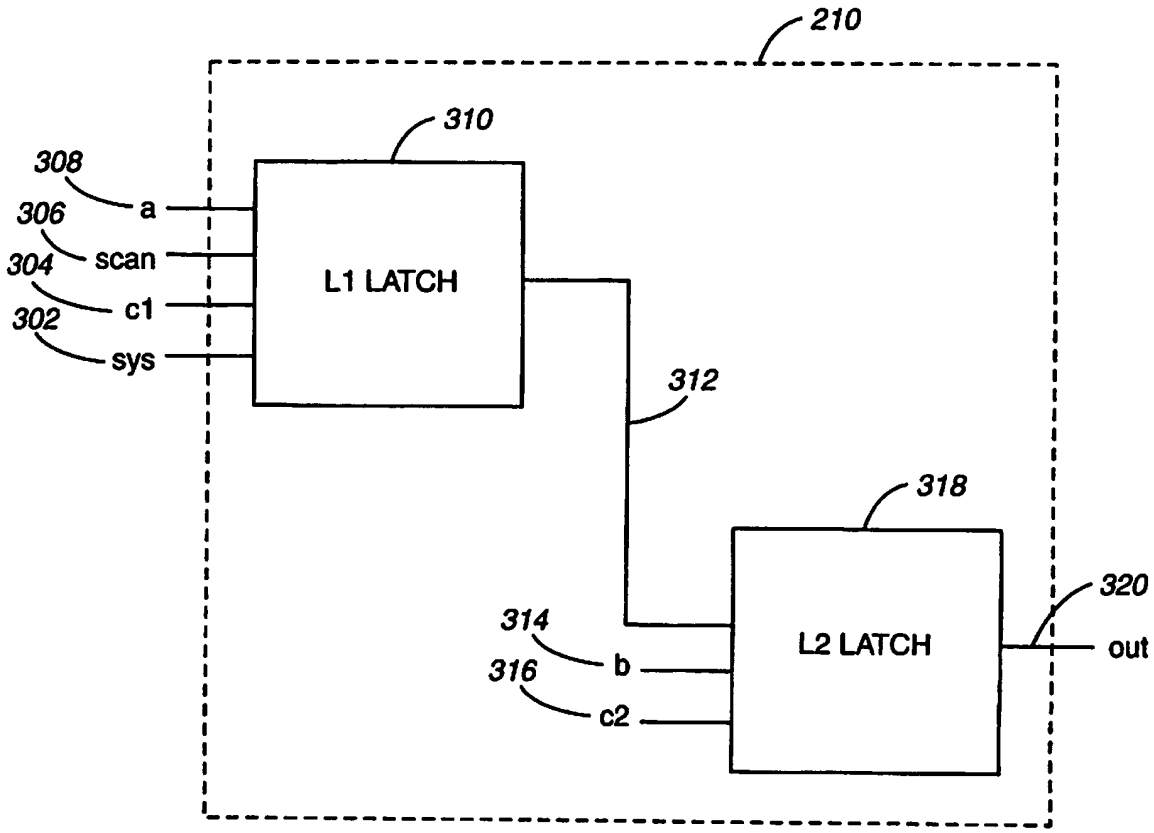
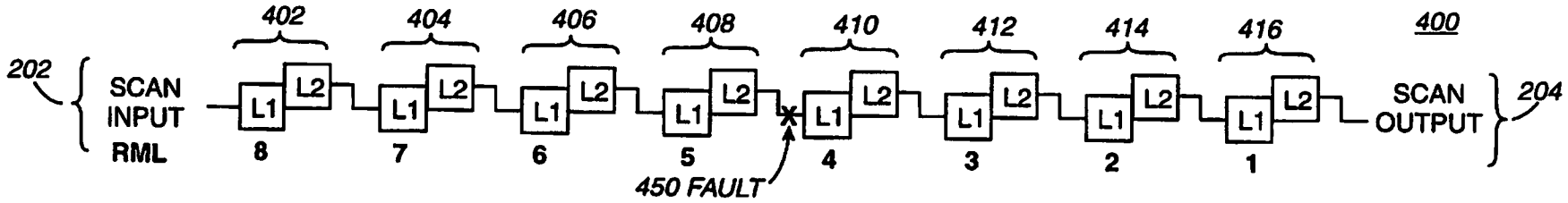


FIG. 2 PRIOR ART



PRIOR ART

FIG. 3



CYCLE

0	?	?	?	?	?	?	?	?	LOAD ALL ZERO'S IN OPERATING REGION
1	0	?	?	?	?	?	?	?	
2	0	0	?	?	?	?	?	?	
420 3	0	0	0	?	?	?	?	?	
4	0	0	0	0	?	?	?	?	
5	0	0	0	0	0	?	?	?	
6	0	0	0	0	0	0	?	?	
7	0	0	0	0	0	0	0	?	
8	0	0	0	0	0	0	0	0	

CYCLE

0	0	0	0	0	0	0	0	0	UNLOAD IN FAILING REGION
1	0	0	0	0	1	0	0	0	
2	0	0	0	0	1	1	0	0	
422 3	0	0	0	0	1	1	1	0	
4	0	0	0	0	1	1	1	1	
5	0	0	0	0	1	1	1	1	
6	0	0	0	0	1	1	1	1	PRIOR ART
7	0	0	0	0	1	1	1	1	

FIG. 4

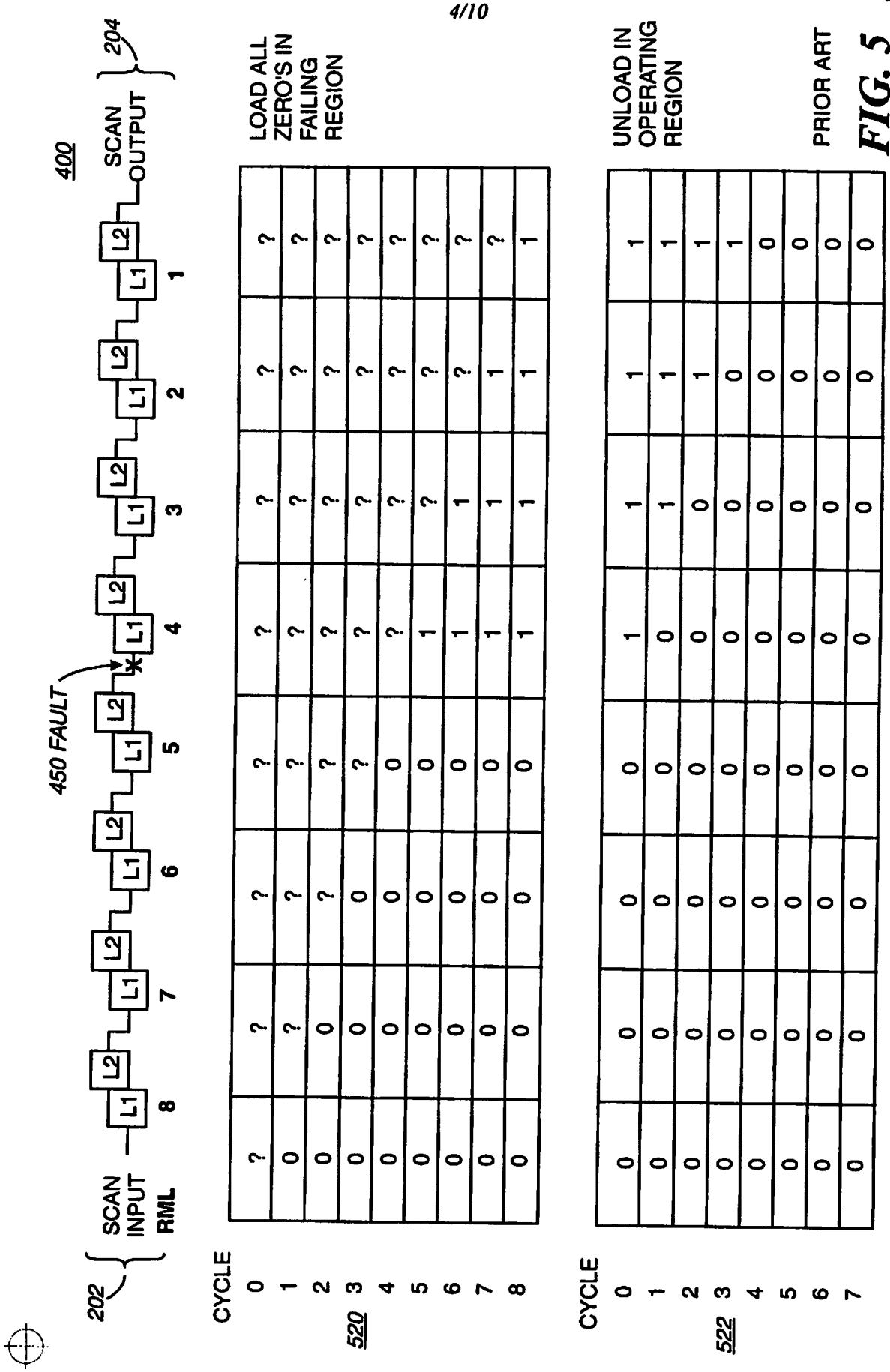
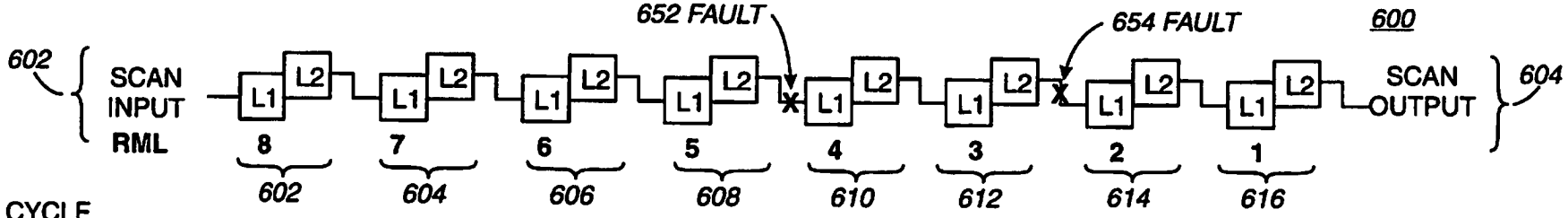

400
SCAN INPUT
RML
202
SCAN OUTPUT
204
L1
L2
8
7
6
5
4
3
2
1
450 FAULT
CYCLE
520
LOAD ALL ZERO'S IN FAILING REGION
UNLOAD IN OPERATING REGION
PRIOR ART
522

FIG. 5



CYCLE									
	0	?	?	?	?	?	?	?	?
	1	0	?	?	?	?	?	?	?
	2	0	0	?	?	?	?	?	?
620	3	0	0	0	?	?	?	?	?
	4	0	0	0	0	?	?	?	?
	5	0	0	0	0	0	?	?	?
	6	0	0	0	0	0	0	?	?
	7	0	0	0	0	0	0	0	?
	8	0	0	0	0	0	0	0	0

LOAD ALL ZERO'S IN FAILING REGION

CYCLE									
	0	0	0	0	0	0	0	0	0
	1	0	0	0	0	1	0	1	0
	2	0	0	0	0	1	1	1	1
622	3	0	0	0	0	1	1	1	1
	4	0	0	0	0	1	1	1	1
	5	0	0	0	0	1	1	1	1
	6	0	0	0	0	1	1	1	1
	7	0	0	0	0	1	1	1	1

UNLOAD IN OPERATING REGION

PRIOR ART

FIG. 6

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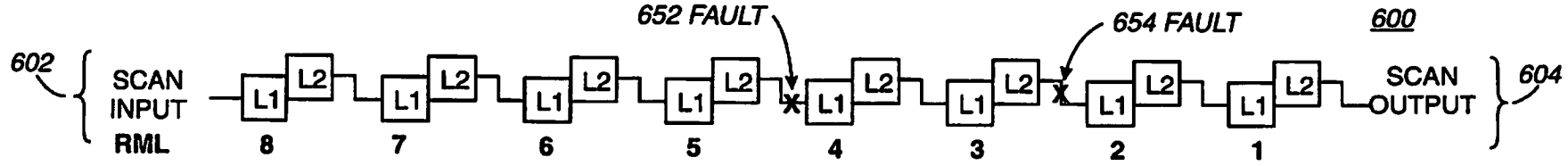

CYCLE

0	?	?	?	?	?	?	?	?	LOAD ALL ZERO'S IN FAILING REGION
1	0	?	?	?	?	?	?	?	
2	0	0	?	?	?	?	?	?	
720 3	0	0	0	?	?	?	?	?	
4	0	0	0	0	?	?	?	?	
5	0	0	0	0	1	?	?	?	
6	0	0	0	0	1	1	?	?	
7	0	0	0	0	1	1	0	?	
8	0	0	0	0	1	1	1	1	

CYCLE

0	0	0	0	0	1	1	1	1	UNLOAD IN OPERATING REGION
1	0	0	0	0	0	1	1	1	
2	0	0	0	0	0	0	1	1	
722 3	0	0	0	0	0	0	0	1	
4	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	PRIOR ART
7	0	0	0	0	0	0	0	0	

FIG. 7

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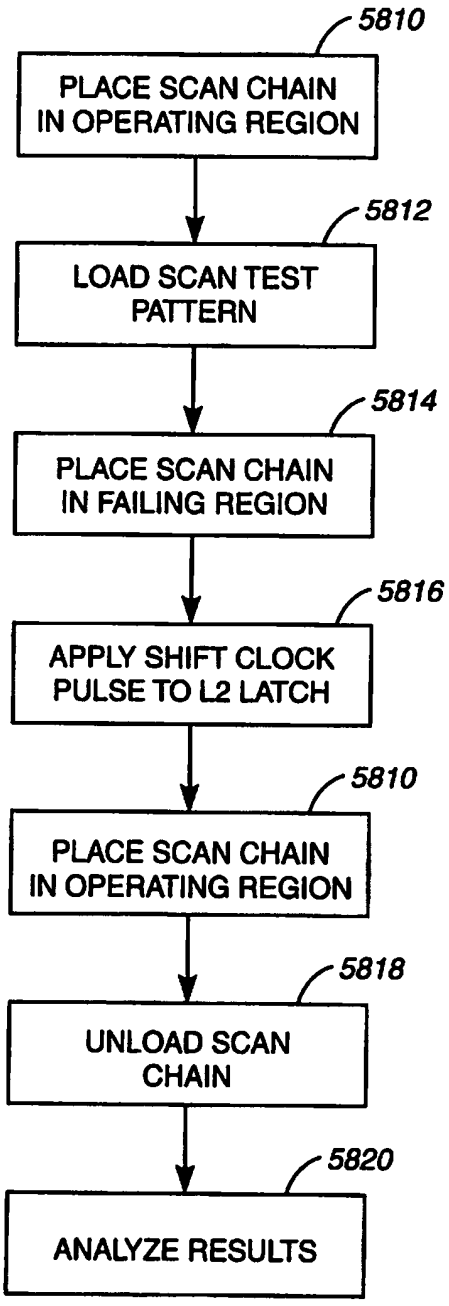

5810
PLACE SCAN CHAIN IN OPERATING REGION
5812
LOAD SCAN TEST PATTERN
5814
PLACE SCAN CHAIN IN FAILING REGION
5816
APPLY SHIFT CLOCK PULSE TO L2 LATCH
5810
PLACE SCAN CHAIN IN OPERATING REGION
5818
UNLOAD SCAN CHAIN
5820
ANALYZE RESULTS

FIG. 8

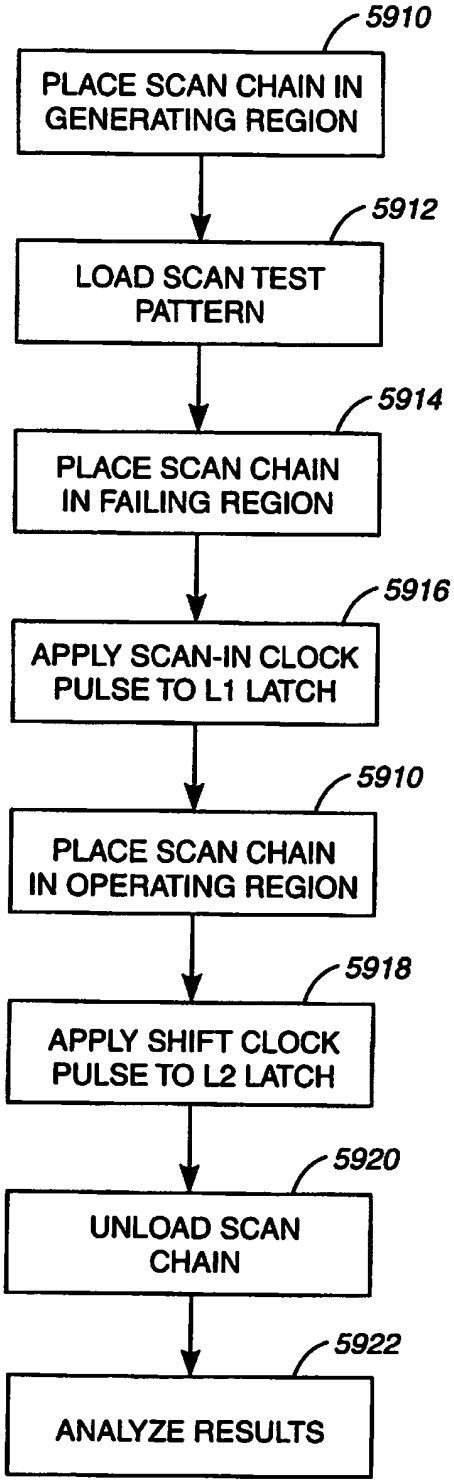
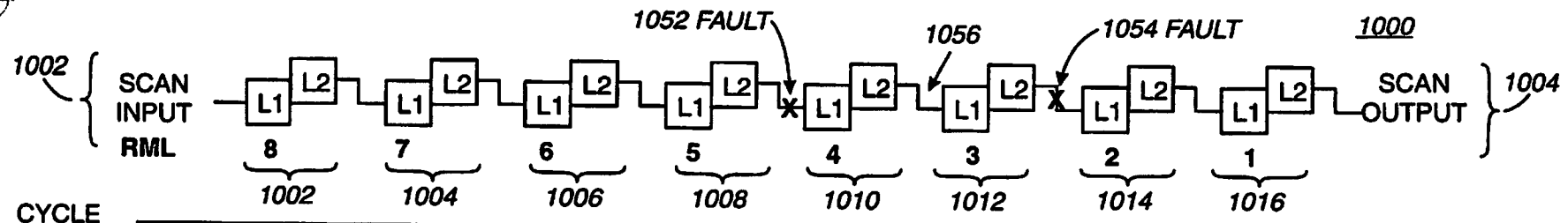

5910
PLACE SCAN CHAIN IN GENERATING REGION
5912
LOAD SCAN TEST PATTERN
5914
PLACE SCAN CHAIN IN FAILING REGION
5916
APPLY SCAN-IN CLOCK PULSE TO L1 LATCH
5910
PLACE SCAN CHAIN IN OPERATING REGION
5918
APPLY SHIFT CLOCK PULSE TO L2 LATCH
5920
UNLOAD SCAN CHAIN
5922
ANALYZE RESULTS

FIG. 9



CYCLE	8 (1002)	7 (1004)	6 (1006)	5 (1008)	4 (1010)	3 (1012)	2 (1014)	1 (1016)	
0	?	?	?	?	?	?	?	?	
1	0	?	?	?	?	?	?	?	
2	0	0	?	?	?	?	?	?	
1020 3	0	0	0	?	?	?	?	?	LOAD ALL ZERO'S IN FAILING REGION
4	0	0	0	0	?	?	?	?	
5	0	0	0	0	0	?	?	?	
6	0	0	0	0	0	0	?	?	
7	0	0	0	0	0	0	0	?	
8	0	0	0	0	0	0	0	0	
CYCLE									
1024 1	0	0	0	0	1	1	1	0	APPLY SCAN CLOCK A (SCANNING CLOCK) IN FAILING REGION
CYCLE									
0	0	0	0	0	1	1	1	0	
1	0	0	0	0	0	1	1	0	
2	0	0	0	0	0	0	1	1	
1022 3	0	0	0	0	0	0	0	1	UNLOAD IN OPERATING REGION
4	0	0	0	0	0	0	0	1	
5	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	

FIG. 10

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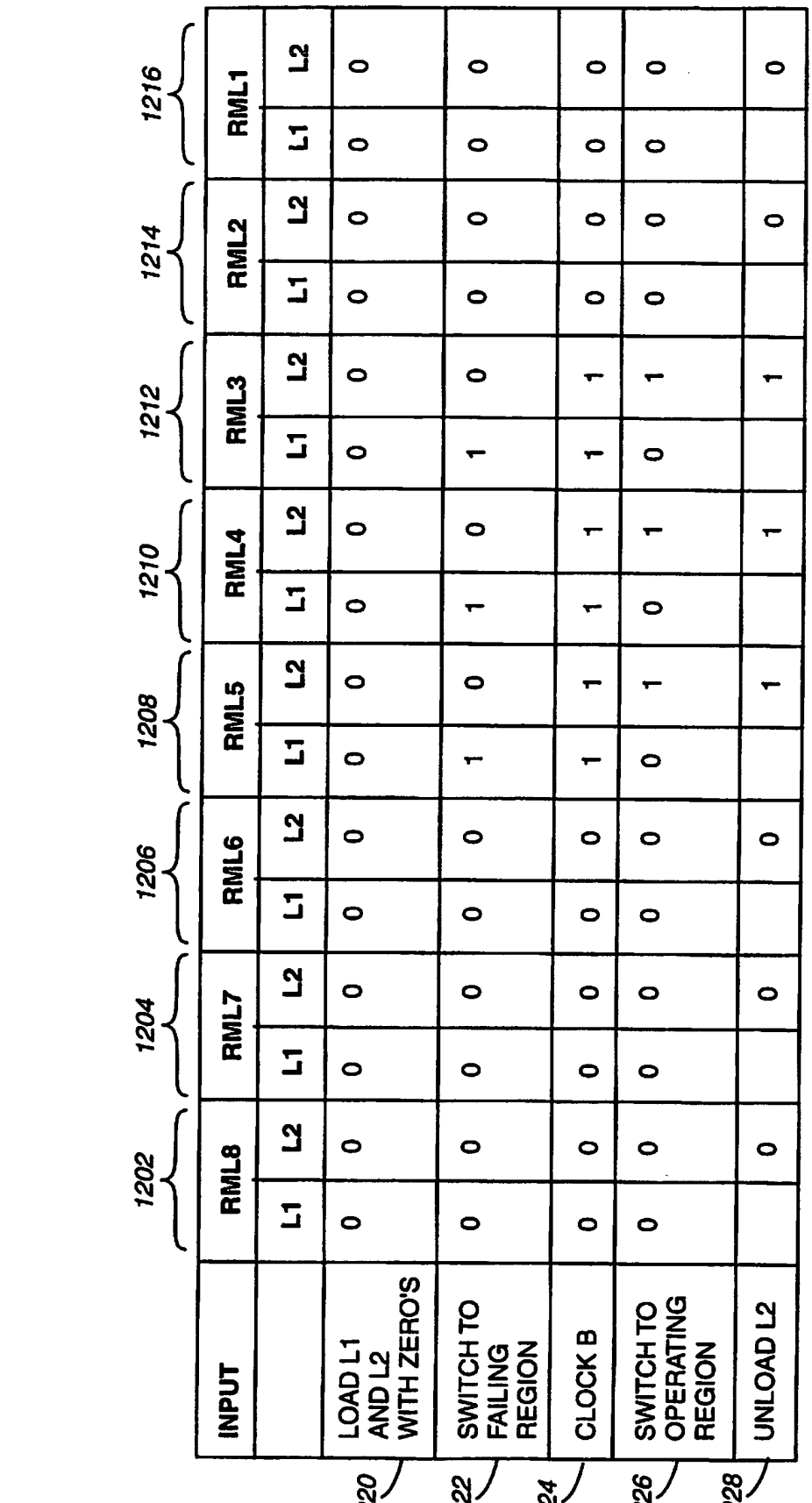
REPLACEMENT SHEET
10/767,046

		1102		1104		1106		1108		1110		1112		1114		1116	
	INPUT	RML8		RML7		RML6		RML5		RML4		RML3		RML2		RML1	
		L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
1120	LOAD L1 AND L2 WITH ZERO'S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1122	SWITCH TO FAILING REGION	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0
1124	CLOCK A	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
1126	SWITCH TO OPERATING REGION	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0
1128	CLOCK B	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0
1130	UNLOAD L2		0		0		0		0		1		1		1		0

FIG. 11 1100



	INPUT	RML8		RML7		RML6		RML5		RML4		RML3		RML2		RML1	
		L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
1220	LOAD L1 AND L2 WITH ZERO'S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1222	SWITCH TO FAILING REGION	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0
1224	CLOCK B	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0
1226	SWITCH TO OPERATING REGION	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0
1228	UNLOAD L2		0		0		0		1		1		1		0		0

1202 1204 1206 1208 1210 1212 1214 1216

FIG. 12 1200